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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,112	01/12/2007	Hiroshi Nakano	056205.57746US	7497
23911 7590 04/25/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER PATEL, HARSHAD R	
			ART UNIT 2855	PAPER NUMBER
			MAIL DATE 04/25/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/580,112

**Applicant(s)**

NAKANO ET AL.

**Examiner**

HARSHAD PATEL

**Art Unit**

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 5/19/06
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

***Drawings***

1. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the relationship between the elements of Fig. 3 and Fig. 5 as described in the specification. Applicant refers that the flow rate measuring circuit of Fig. 5 and the temperature control circuit of Fig. 3 are both provided on the same substrate, which is shown in Fig. 1, however, it is not clear as to how both the circuits are in relationship to each other. There should be some interconnection between the temperature control circuit and the flow rate measuring circuit in order to relate the measured temperature difference measured by the temperature control circuit with the flow rate measuring circuit. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be

renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it uses claim language such as "comprising" and "means". Correction is required. See MPEP § 608.01(b).
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
6. The disclosure is objected to because of the following informalities: On page 8, line 26, "second resistor" is not provided with a reference numeral. It seems that the numeral should be "8". On pages 10 and 11, applicant uses "/" in the equations at some incidents. It is unclear as to whether the applicant meant to use a single " or not. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said first and second temperature detecting resistors" in line 15. It seems that the term, "detecting" should be changed to -- measuring --. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "said first resistor" and "said second resistor" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "said first resistor" and "said second resistor" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 4, line 18, it refers to a "flow rate detecting means", it is unclear as to what flow rate detecting means is the applicant referring to. Is the flow rate detecting circuit and the flow rate detecting means same or different? If applicant refers to the first and the second temperature detecting resistors as being the flow rate detecting means, then such should be referred properly for clarity to the claim.

Claim 5, "said first temperature measuring resistor" and "said second temperature measuring resistor in lines 2-3 lacks antecedent basis.

Claim 6, "said first temperature measuring resistor" and "said second temperature measuring resistor in lines 3-4 lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horie et al. (6,935,172) in view of Matsumura et al. (6,769,298) (hereinafter Horie or Matsumura).

Horie teaches a thermal flowmeter of a fluid, comprising: a flow rate measuring element disposed in a fluid passage and including a heating resistor (HF) generating heat with supply of a current, a temperature compensation resistor (CF) for detecting a fluid temperature, a first temperature measuring resistor (Ru) for measuring a temperature upstream of said heating resistor, and a second temperature measuring resistor (Rd) for measuring a temperature downstream of said heating resistor, all of said resistors being formed on the same substrate; a temperature control circuit for controlling a temperature of said heating resistor, a computing unit for receiving signals corresponding to a fluid flow rate from said first and second temperature detecting resistors, performing correction depending on temperature by using said temperature sensor, and outputting the corrected result; and heating temperature control means causing a difference between the fluid temperature and the temperature of said heating resistor to be changed depending on the fluid temperature. Horie teaches a fixed resistor (7) in series with the temperature compensation resistor (Fig. 8). Horie does not explicitly teach a casing supported to a wall of the intake pipe and a temperature sensor for measuring the temperature of the casing. Matsumura teaches a casing (13) supported to a wall surface of an intake pipe forming the fluid

passage and supporting a flow rate measuring element and a temperature sensor for measuring a temperature in said casing. It would be obvious to a person having ordinary skill in the art at the time the invention was made to use the temperature sensor of Matsumura in the device of Horie since it would help adjust and correct the temperature dependent errors in the signal processing unit. As to having different resistance temperature coefficient for the heating resistor and the temperature compensation resistor, it would be an inherent feature as to have such a difference since a heating resistor should have a different resistance coefficient since it is to be heated when the current is applied to it, whereas the temperature compensation resistor is to sense the temperature. It would be within the scope of a skilled individual to determine the resistance temperature coefficient for each resistor based on the functional characteristics of the resistor. Arranging the resistors in the circuit to achieve a known result would be within the scope of a skilled individual.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HARSHAD PATEL whose telephone number is (571)272-2187. The examiner can normally be reached on Monday-Thursday (6:30 AM-5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harshad Patel/  
Primary Examiner, Art Unit 2855

HP  
4/24/08